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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/525,248

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Tadaaki Hirai

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EXAMINER

BOOSALIS, FANI POLYZOS

ART UNIT

PAPER NUMBER

2884

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/525,248

Applicant(s)

HIRAI ET AL.

Examiner

Faye Boosalis

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-10 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/29/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Raylman et al* (US 6,236,880 B1) in view of *Carroll et al* (US 4,959,547).

Regarding claim 1, Raylman discloses a radiation detector (10) comprising: a main body (50); and a radiation detection probe (20) connected to the main body (See Fig. 1 and col. 5, lines 13-15), the radiation detection probe including: a radiation detection element (160) for detecting radiation transmitting through the distal end (130) of the radiation detection probe (See Fig. 2 and col. 7, lines 18-25 and 37-41). Raylman does not disclose a light-emitting device emitting pointer light toward distal end of probe. Carroll discloses a radiation detector probe comprising: a light-emitting diode (92) for emitting light toward distal end of radiation detection probe and a first window (28) provided on the distal end of the radiation probe to transmit light (See Fig. 3 and col. 9, lines 25-40). Carroll teaches in order to expedite the aiming of the probe so its distal end (the aperture covered by window (28)) can be directed to whatever portion of the body the user wishes to examine, the probe (10) includes a light beam aiming system, comprising a light source such as an LED (92) (col. 9, lines 25-31). Therefore, it would have been obvious to modify the radiation detection probe disclosed by Raylman, to

include an LED emitting light toward the distal end of the probe, as disclosed supra by Carroll, to allow for a more efficient radiation detection probe system.

Regarding claim 5, Carroll discloses a radiation detector (10) further comprising an optical guide (i.e. light beam aiming system) for guiding the light from the LED (92) to the first window (28) (col. 9, lines 25-31).

Regarding claim 6, Carroll discloses a radiation detector (10) wherein the optical guide has a pipe (96) extending from the LED (92) to the first window (28) (col. 9, lines 25-31).

Regarding claim 7, Carroll discloses a radiation detector (10) wherein an optical fiber (98) is placed in the pipe (96) (See Fig. 3).

Regarding claim 8, Carroll discloses a radiation detector wherein the radiation detection probe further includes a light-blocking cover (22) (See Fig. 3) and the optical guide has a through-hole provided in the light-blocking cover (See Fig. 2 and col. 8, lines 62-68 and col. 9, lines 1-2). Carroll does not disclose of the LED covered by the light-blocking cover. Raylman discloses a radiation detector wherein the radiation detection probe further includes a cover to cover the LED (32') (See Figs. 1 and 2 and col. 5, lines 32-50). Raylman discloses the probe body serves both as a handle and also as a housing for various electrical components associated with the probe system (col. 5, lines 32-36). Therefore, it would have been obvious to modify the detector disclosed by Carroll, to include covering the LED, as disclosed supra by Raylman, to allow for a more versatile apparatus.

Regarding claim 9, Carroll discloses wherein the radiation detection probe further includes a collimator disposed between the distal end of the radiation probe and the radiation detection element to collimate the radiation (col. 5, lines 42-54).

Regarding claim 10, Carroll discloses wherein the first window (28) is placed on the central axis of the collimator (See Fig. 6B and col. 3, lines 54-68 and col. 5, lines 42-54).

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Raylman et al* (US 6,236,880 B1) and *Carroll et al* (US 4,959,547) as applied to claim 1 above, and further in view of *Pompei et al* (US 6,219,573 B1).

Regarding claim 4, Raylman discloses a radiation detector (10) comprising: a main body (50); and a radiation detection probe (20) connected to the main body (See Fig. 1 and col. 5, lines 13-15), the radiation detection probe including: a radiation detection element (160) for detecting radiation transmitting through the distal end (130) of the radiation detection probe (See Fig. 2 and col. 7, lines 18-25 and 37-41). Carroll discloses a radiation detector probe comprising: a light-emitting diode (92) for emitting light toward distal end of radiation detection probe and a first window (28) provided on the distal end of the radiation probe to transmit light (See Fig. 3 and col. 9, lines 25-40). Neither Raylman nor Carroll disclose of a condense lens. Pompei discloses a radiation detector probe including a condenser lens (i.e. planoconvex lens) provided in the first window (col. 6, lines 52-60). Pompei teaches radiation which enters the radiation guide at greater angles, yet travels through the radiation guide, leaves the guide at greater angles and is thus unlikely to be viewed by the flake. The length of the radiation guide

is another parameter which affects the field of view. By using a planoconvex lens as the window (35), the field of view can be further limited (col. 6, lines 52-60). Therefore, it would have been obvious to modify the radiation detection probe disclosed by Raylman, and Carroll, to include a condenser lens, as disclosed supra by Pompei, to allow for a more efficient radiation detection probe system.

Allowable Subject Matter

4. Claims 2-3 are objected to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

Regarding dependent claims 2-3, the prior art, as stated supra, does not disclose or fairly suggest of a radiation detector comprising a second window, wherein the radiation detection element is divided into a plurality of element pieces arranged to surround the second window.

Regarding dependent claim 11, the prior art, as stated supra, does not disclose or fairly suggest of a radiation detector wherein an input plate, the first window is a through-hole in the input plate, blocks an electromagnetic wave having an energy of 1 keV or less.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Boosalis whose telephone number is 571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FB


OTILIA GABOR
PRIMARY EXAMINER